

# Giovanni Franzo

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**Date of birth:**

**Nationality:**

**Gender**

**Phone:**

**Email address:**

**Address:**

## WORK EXPERIENCE

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09/12/2022 - CURRENT - LEGNARO, ITALY

**ASSOCIATE PROFESSOR** DEPARTMENT OF ANIMAL MEDICINE, PRODUCTION AND HEALTH (MAPS), UNIVERSITY OF PADUA

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Academic discipline: VET/05 Infectious Diseases of Domestic Animals

11/2017 - 09/12/2022 - LEGNARO, ITALY

**RESEARCHER** DEPARTMENT OF ANIMAL MEDICINE, PRODUCTION AND HEALTH (MAPS), UNIVERSITY OF PADUA

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01/2015 - 10/2017 - LEGNARO, ITALY

**FELLOW RESEARCHER** DEPARTMENT OF ANIMAL MEDICINE, PRODUCTION AND HEALTH (MAPS), UNIVERSITY OF PADUA

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01/2012 - 12/2014 - LEGNARO, ITALY

**PHD STUDENT** DEPARTMENT OF ANIMAL MEDICINE, PRODUCTION AND HEALTH (MAPS), UNIVERSITY OF PADUA

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10/2011 - 12/2011 - LEGNARO, ITALY

**ATTENDING GRADUATE AT THE LABORATORY OF INFECTIOUS DISEASES** DEPARTMENT OF PUBLIC HEALTH, COMPARATIVE PATHOLOGY AND HYGIENE, PADUA UNIVERSITY

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## EDUCATION & TRAINING

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11/2017

**SECOND DEGREE MASTER IN "BIostatistics AND CLINICAL EPIDEMIOLOGY"**- UNIVERSITY OF PAVIA

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**Thesis:** Comparison and validation of different machine learning methods for the prediction of survival to Canine Parvovirus 2 infection

03/2015

**DOCTOR IN PHILOSOPHY" (PHD) IN "VETERINARY SCIENCE"** - UNIVERSITY OF PADUA

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**Field(s) of study:**Veterinary Science | **Thesis:** Further insight into the molecular epidemiology and evolutionary dynamics of rapidly evolving RNA and ssDNA viruses

09/2011

**DEGREE IN VETERINARY MEDICINE-** UNIVERSITY OF PADUA

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**Final grade:** 110/110 cum laude | **Thesis:** Application of molecular biology assays to the diagnosis of Porcine circovirus

type 2 (PCV2) infection

## SCIENTIFIC HIGH SCHOOL DIPLOMA - LICEO SCIENTIFICO "LE FILANDIERE"

Final grade: 100/100 cum laude

### LANGUAGE SKILLS

Mother tongue(s): **ITALIAN**

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
<b>ENGLISH</b>	C1	C1	C1	C1	C1

### SKILLS

Microsoft Office | Social Media | Microsoft Excel | Microsoft Word | Zoom | Microsoft Powerpoint | Bioinformatics software | Next Generation Sequencing | Phylogenesis | Phylodynamics | Statistic tools | Molecular Biology softwares

### INTERNATIONAL RESEARCH ACTIVITIES

#### Visiting researcher

- 6th November – 22th December 2017: Visiting Researcher at IRTA, Centre de Recerca en Sanitat Animal (CReSA, IRTA- UAB), Campus de la Universitat Autònoma de Barcelona, 08193 Bellaterra, Barcelona, Spain. The relative project was focused on the study of within-host Porcine circovirus type 2 subpopulations using Next Generation Sequencing data. The study aimed to reconstruct the structure of viral subpopulations in longitudinally collected samples. I also took part in metagenomic studies and more traditional molecular epidemiological investigations dealing with Porcine circovirus type 3.
- 12th March 2016 – 20th March 2016: Visiting researcher at INRA, UMR Interactions Hotes-Agents Pathogenes, Ecole Nationale Veterinaire, Toulouse. The visit was focused on the analysis of Next Generation Sequencing data (both resequencing and metagenomic analysis) obtained from several avian species (i.e. avian Metapneumovirus, Infectious bronchitis virus, avian Paramixovirus). I also participated in the training of local PhD students.
- 10th November – 5th December 2014: Visiting researcher at MRC University of Glasgow. Centre for Virus Research; Institute of Infection, Immunity and Inflammation; College of Medical, Veterinary and Life Sciences. The relative project was focused on the use of a phylodynamic approach to model and reconstruct population dynamics, evolutionary rates and selective forces shaping Porcine circovirus type 2 molecular epidemiology and evolution.

### PROJECTS

**MAJOR RESEARCH/PROFESSIONAL INTERESTS** The research activities focus mainly on the study of viral evolution and molecular epidemiology using different bioinformatic, phylogenetic-based and biostatistics approaches. To date, my studies have focused mostly on rapidly evolving RNA and single-strand DNA viruses affecting swine (PCV-2, PCV-3 and PRRSV), poultry (aMPV, IBDV and IBV) and pets (CPV and FPV). In the last years, I extensively worked on the epidemiology of these and other viruses (e.g. ASFV, AHSV, WNV, BFDV, etc) in wild animals, both in the Italian scenario and through collaboration with foreign counties, Africa in particular. I have also investigated the effect of these viruses' remarkable heterogeneity on the control strategies (i.e. vaccination efficacy) and performances of molecular biology-based diagnostic assays. Recently, I worked on the development of Machine Learning models aimed to predict the disease outcome based on genetic data or clinical parameter analysis.

## ● SKILLS

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### Research skills

- Laboratory skills: Nucleic acid extraction; PCR, RT-PCR and real-time PCR design, validation and execution; Nucleic acid purification; Sanger sequencing; Cloning.
- Biostatistical skills: Study design and sample size calculation; database creation, management and manipulation; execution of statistical test and hypothesis testing; creation and validation of Machine Learning predictive algorithms; advanced knowledge of tools used for statistical analysis (i.e. R, Stata, SPSS).
- Bioinformatic skills: Sanger sequence quality check; sequence alignment; evolution model selection; recombination detection; phylogenetic analysis; models comparison and hypothesis testing; selective pressure estimation; phylodynamic analysis; epitopes prediction; homology modeling; Next Generation Sequencing data analysis (re-sequencing, de-novo sequencing, sub-population investigations, metagenomic); good knowledge of programming tools like R and Python.

## ● PUBLICATIONS

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### International journals

Author of 202 articles in international journals

3,662 citations

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compact-cv-editor.templates.one.publication.links <https://www.scopus.com/authid/detail.uri?authorId=55961557100>

### Google Scholar Profile

Updated list of publication is available at the Google scholar profile

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## ● TEACHING ACTIVITIES

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2016 - 2017

### Molecular basis of disease, immunology and transmissible diseases

Lecturer in the course "Molecular basis of disease, immunology and transmissible diseases" of the Master Degree in Biotechnologies for food science (taught in English), Padua University.

2018 - 2020

### Biomolecular Techniques Applied to Transmissible Diseases

Lecturer in the course "Biomolecular Techniques Applied to Transmissible Diseases" of the Master Degree in Animal Biotechnology, Bologna University.

2018 - CURRENT

### Biotechnology applied to microorganisms of agri-food and veterinary interest

Lecturer in the course "Biotechnology applied to microorganisms of agri-food and veterinary interest" of the Biotechnology course, Padua University (32 hours; 3 CFU).

2019 - CURRENT

### Epidemiology and Risk Analysis

Lecturer in the course "Epidemiology and Risk Analysis" of the Master Degree in Biotechnologies for food science (taught in English), Padua University (32 hours; 4 CFU).

2020 - CURRENT

### Practical activities of the Infectious disease module

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Lecturer in the practical activities of the Infectious disease module of the course in Veterinary Medicine, Padua University ( 60 hours; 1CFU)

2020 - CURRENT

#### Conservation medicine of aquatic animals

Lecturer in the Master in "Conservation medicine of aquatic animals", Padua University

05/06/2020

#### LA DIAGNOSTICA IN MEDICINA VETERINARIA: INNOVAZIONE E UTILIZZO CONSAPEVOLE

Lecturer in the webinar "LA DIAGNOSTICA IN MEDICINA VETERINARIA: INNOVAZIONE E UTILIZZO CONSAPEVOLE" organized by the Scuola di Specializzazione in Sanità Animale, Allevamento e Produzioni Zootecniche

2024 - CURRENT

#### Gestione Sanitaria E Biosicurezza Nell'allevamento Degli Animali Da Reddito

Lecturer in the course "Gestione Sanitaria E Biosicurezza Nell'allevamento Degli Animali Da Reddito" in the Scienze tecnico assistenziali veterinarie Course, Padua University (32 hours; 4 CFU).

17/04/2023 - 18/04/2023

#### Malattie Virali Suini

Lecture on "Porcine Viral Diseases" within the course Animal Health, Husbandry and Livestock Production, University of Teramo

### ● **NETWORKS AND MEMBERSHIPS**

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European College of Veterinary Microbiology (ECVM)

Italian Society of Avian Pathology (SIPA)

Italian Society of Swine Pathology and Farming (SIPAS)

Italian Society of Livestock Veterinarians (SIVAR)

Italian Society of Veterinary Infectivists (ANIV)

Member of the EUROPRRS2012 COST Action FA902 and IBV COST Action FA1207

### ● **HONOURS AND AWARDS**

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03/03/2015 Houghton Trust

**Winner of the Houghton Trust Grant to take part in the XIX Congress of the World Veterinary Poultry Association** Winner of the Houghton Trust Grant to take part in the XIX Congress of the World Veterinary Poultry Association

02/11/2016 SIPAS

**Winner of the SIPAS research scholarship.** Write here the description...

07/12/2016 Dept. Animal Medicine, Production and Health (MAPS)

**Scholarship entitled "Analisi biomolecolari mediante PCR e Sequenziamento per l'evidenziazione e differenziazione del virus della bronchite infettiva aviare"**

03/03/2019 Houghton Trust

**Winner of the Houghton Trust Grant to participate in the XXI Congress of the World Veterinary Poultry**

**Association** Winner of the Houghton Trust Grant to participate in the XXI Congress of the World Veterinary Poultry Association

**Enlisted among the researchers within the top 2% of scientists of their main discipline** Enlisted among the researchers within the top 2% of scientists of their main discipline in the recently published work: Ioannidis, John PA, Kevin W. Boyack, and Jeroen Baas. "Updated science-wide author databases of standardized citation indicators." PLoS Biology 18.10 (2020): e3000918. The results have been confirmed the following year.

## ● **INSTITUTIONAL ACTIVITIES**

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### Academic Activities

- Since 2017 Member of the Dept. MAPS council.
- Since 2018 Member of Biotechnology course council
- Since 2020 Member of Biotechnology for food and science course council.
- Since 2020 Member of the Research Committee of dept.MAPS.
- Since 2021 Member of the Group for Accreditation and Evaluation of the Biotechnology for food and science course.
- Since 2021 Member of Veterinary Medicine course council.
- Since 2021 Member of the Board of the PhD program in Veterinary Science.
- Since 2022 representative of the dept.MAPS for Inclusion and Disability
- Since 2024, responsible for teaching coordination in the PhD Program in Veterinary Science.
- Since 2025, Chair of the Final Examination Committee for the Bachelor's Degree in Veterinary Technical and Assistance Sciences.
- Member of the evaluation panel of the PhD Thesis in Veterinary Sciences for the Bologna University (XXXI cycle).
- Member of the PhD commission for the Universidade de Sao Paulo, Brazil (18 November 2015) and Facultat de Veterinària, UAB, Spain (1 July 2021).

## ● **PATENTS**

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**Patent number 102017000031092 - Method for predicting cross-protection between Infectious Bronchitis strains**

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## ● **EDITORIAL ACTIVITY**

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### Editorial Board

- Since 2019 Member of the editorial board of Large animal Review
- Since March 2020: Member of the editorial board of Frontiers in Veterinary Science
- Since February 2023 Member of the editorial board of Animals
- Since March 2020: Guest editor of Veterinary Science in the Special issue "Trends in Poultry Diseases"
- Since February 2021: Guest editor of Pathogens in the Special issue "Advances in Circoviruses"
- Since January 2023: Guest editor of Pathogens in the Special issue "Evolution and Adaptation of Avian Viruses"

### Chapter author

- Author of the chapter "Circoviruses (Circoviridae) in the Encyclopedia of Virology (4th edition). Ed. Elsevier: FRANZO G, SEGALÉS J. CIRCOVIRUSES (CIRCOVIRIDAE). IN: BAMFORD DH, ZUCKERMAN M, EDITORS. ENCYCLOPEDIA OF VIROLOGY. 4TH ED. ELSEVIER SCIENCE; 2020. P. 182–92
- Author of several chapters of the book "MICROBIOLOGIA E VIROLOGIA IN SINTESI", Fondazione iniziative zooprofilattiche e zootecniche, Brescia.
- Author of the chapter Circoviruses. Segalés, J., Allan, G.M. and Franzo, G. (2025). In Diseases of Swine (eds

● **EDUCATIONAL PROGRAMS FOR PUBLIC AND PRIVATE ORGANIZATIONS**

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12/05/2023

**PRRSpective: A 360° Look at PRRSV**

Online webinar on Porcine Reproductive and Respiratory Syndrome Virus conducted within the framework of FAO training activities for veterinarians from Asia and Africa.

12/2024 - 06/2025

**Seminar on Porcine circovirus 2 epidemiology, evolution and control**

Seminars and presentations on Porcine Circovirus 2 epidemiology, evolution, and control held for Italian swine veterinarians

21/05/2025

**Molecular Epidemiology and Emerging Trends in PCV2: Are We Approaching a Stable Equilibrium?**

Round table on Porcine Circovirus 2 epidemiology and evolution performed during a side event in the framework of the European Symposium of Porcine Health Management (ESPHM) 2025, held in Bern, Switzerland.

digitalmente da Giovanni Franzo